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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,197	07/02/2001	Yoshimi Kudo	Q64874	8787

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EXAMINER	
LE, HUYEN D	
ART UNIT	PAPER NUMBER
2643	6

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,197

Applicant(s)

KUDO ET AL

Examiner

HUYEN D. LE

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 3-7 is/are allowed.
6) ☒ Claim(s) 1 and 8-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Walsh (U.S. patent 3,424,873).

Regarding claims 1 and 8-11, Walsh teaches a metal diaphragm body (1), and a paper auxiliary diaphragm (32) that is integrally bonded to a part of the diaphragm body (see col. 14, line 75 through col. 15, lines 1-2, and figure 8).

As broadly claimed, Walsh shows the auxiliary diaphragm (32) that is formed to cover only the center portion of the diaphragm body (as shown in figure 8, the paper diaphragm 32 cover the central metal diaphragm 1 between the two ends of the suspension 7 and the coil tube 3, 13).

3. Claims 9 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Barton (U.S. patent 1,713,210).

Regarding claim 9, Barton teaches a diaphragm body (4) having an inner surface and an outer surface and an auxiliary diaphragm (26). As shown in figure 2, the inner surface of the auxiliary diaphragm (26) is attached to the outer surface of the diaphragm body (4).

Art Unit: 2643

Regarding claims 12 and 14, Barton shows the auxiliary diaphragm (26) that comprises recesses that are recessed towards a center of the diaphragm body and formed along an outer periphery of the auxiliary diaphragm (26, figures 2, 3).

4. Claims 9-10 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (U.S. patent 4,395,597).

Regarding claims 9-10, Suzuki teaches a diaphragm body (21, 40, 60) having an inner surface and an outer surface, and an auxiliary diaphragm (24, 42, 63, col. 9, lines 61-65). As shown in figure 2, the inner surface of the auxiliary diaphragm (24, 42) is attached to the outer surface of the diaphragm body (21, 40).

Regarding claim 17, Suzuki shows the auxiliary diaphragm (42) that comprises a cylindrical portion to accommodate a voice coil bobbin (figure 11).

5. Claims 9 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakurai (U.S. patent 4,275,278).

Regarding claim 9, Sakurai teaches a diaphragm body (10, 11) having an inner surface and an outer surface, and an auxiliary diaphragm (15). As shown in figures 1 and 3, the inner surface of the auxiliary diaphragm (15) is attached to the outer surface of the diaphragm body (11).

Regarding claim 17, Sakurai shows the auxiliary diaphragm (15) that comprises a cylindrical portion to accommodate a voice coil bobbin (figure 3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barton (U.S. patent 1,713,210).

Regarding claim 13, Barton does not specifically teach an odd number of the recesses as claimed. However, Barton does not restrict to any number for the recesses along the periphery of the auxiliary diaphragm (26).

Therefore, it would have been obvious to one skilled in the art to provide any number for the recesses along the periphery of the auxiliary diaphragm (26) such as an odd number for alternate choice and the improved frequency characteristics.

Regarding claims 15-16, Barton does not specifically teach the design of the recesses of the diaphragm based on the high limit frequency, the weight of the diaphragm

Art Unit: 2643

or the continuity between a midrange speaker and a tweeter speaker as claimed.

However, Barton does not restrict to any number or the design for the recesses along the periphery of the auxiliary diaphragm (26).

Therefore, it would have been obvious to one skilled in the art to provide any number or design for the recesses along the periphery of the auxiliary diaphragm (26) such as the design based on the high frequency limit of the diaphragm, the weight of the diaphragm or the continuity between a midrange speaker and a tweeter speaker for alternate choice depending on the type of the loudspeaker for the improved frequency characteristics.

Allowable Subject Matter

8. Claims 3-7 have been allowed.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (703) 305-4844. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HL

August 31, 2004



HUYEN LE
PRIMARY EXAMINER